



**{In Archive} Fw: West Lake Landfill: Batch 4 of EPA Responses to PRP
Comments (Final Input)**

Rich Kapuscinski to: Dan Gravatt, DeAndre Singletary
Cc: Doug Ammon, Stuart Walker, Ron Wilhelm

07/25/2011 08:20 AM

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OSRTI has no further comments about the remaining four replies. In three of these cases, the PRPs claim that they will make the recommended change:



EPA Additional 50 - Risk Calculations EPA feedback.doc



EPA Additional 51 - Risk Calculations EPA feedback.doc



EPA Additional Comment #48 Screening level selection EPA feedback.docx

In the last, they say that no change is necessary:



EPA Addl 32 and MDNR 4 - SLAPS & FUSRAP Experience EPA feedback.doc

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EPA Appendix F - Risk Assessment # 50

Comment:

50. Appendix F, page 54, first paragraph, and Table 8-4, second column: The PRG calculator does include external as well as inhalation for the ambient air scenario as does the indoor scenario in the BPRG calculator. The risk assessment should be corrected to include this pathway of exposure

Discussion:

The text was referring to direct exposures from RIM deposits on the site, not submersion exposures in an airborne plume. This attempt at providing a simple screening calculation to establish upper-bound risks to off-property receptors has been removed from the revised draft Appendix F and replaced with the alternate approach requested by EPA reviewers.

Risks to receptors at the site boundary have been reevaluated by estimating air concentrations at the boundary and evaluating the risks to the target receptor from those concentrations. Both inhalation and submersion exposure routes are considered in this quantitative evaluation.

Proposed Text Change:

The revised approach requested by EPA will be used in the revised Appendix F to calculate risks to a boundary receptor from emissions associated with construction activities for each alternative. The text cited in the comment and its accompanying table have been replaced in the short-term evaluations of each alternative.

EPA FEEDBACK:

EPA accepts this response; however, we will need to review the revised Appendix F in the final SFS report to ensure that it fully addresses this issue.

EPA Appendix F - Risk Assessment # 51

Comment:

51. Appendix F, page 71, Table 10-3, column 5: The source of these concentrations should be explained in the final document. These concentrations appear to be much lower than the survey results.

Discussion:

Footnote “d” identifies Table 5-1 as the source of these numbers. These values (found in column 4 of that table) are the composite concentrations produced by combining the reported analytical results from Area 2 and the Buffer Zone property (formerly called the Ford Property). These numbers came from information published in the Baseline Risk Assessment (Auxier 2000). The use of composite numbers confused several reviewers and the inventory used in the short-term evaluations has been revised and now uses just the Area 2 data, allowing a direct comparison with previously published values.

Proposed Text Change:

The numbers from column 3 in Table A.3-6 of the Baseline Risk Assessment have been used for short-term risk evaluations in the revised draft Appendix F.

EPA FEEDBACK:

EPA accepts this response.

EPA Additional Comment #48

Comment:

Appendix F, page 6, footnote a: This footnote states that Region 9 soil screening levels were used for chemical risk assessment. The final report should use the Regions 3, 6, and 9 regional screening level calculator in order to provide a more accurate, up-to-date evaluation.

Discussion

The requested changes have been made to Table 4-2 and footnote a.

Proposed Text Changes:

A revised screening table is attached to this response.

EPA FEEDBACK: EPA accepts this response and proposed text change.

Table Error! No text of specified style in document.-1 Summary of Chemical Toxicity Screen for Surface Soil

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Analyte	Risk- or HI- Based Industrial	Maximum Soil Concentrations ^b		Selection/Screening of COCs in Soils ^c		Screening Result
	Screening Values ^a (mg/kg)	Area 1 (mg/kg)	Area 2 + Boundary (mg/kg)	Area 1 0-1 ft	Area 2 + Boundary 0-1 ft	Changed from Baseline?
Inorganic Chemicals						
Arsenic	1.60x10 ⁰⁰	220	35	YES	YES	no
Beryllium	2.00x10 ⁰³	3.3	2.2 ^f	no	no	no
Cadmium	8.00x10 ⁰²	7.9	6.3 ^f	no	no	no
Chromium (VI)	5.60x10 ⁰⁰	31	49 ^f	YES	YES	Added
Copper	4.10x10 ⁰⁴	2,300	360	no	no	no
Lead	8.00x10 ⁰²	320	2,200	no	YES	no
Mercury	3.40x10 ⁰¹	0.17	0.27	no	no	no
Nickel	2.00x10 ⁰⁴	3,600	680	no	no	no
Selenium	5.10x10 ⁰³	250	38	no	no	no
Thallium	1.40x10 ^{01 d}	1.2	nr ^e	no	no	no
Uranium	3.10x10 ⁰³	437.5	875	no	no	Deleted
Zinc	3.10x10 ⁰⁵	120	400 ^f	no	no	no
Organic Chemicals						
Acetone	6.30x10 ⁰⁵	0.034	0.038	no	no	no
Bis(2-ethylhexyl) phthalate	1.20x10 ⁰²	7.8	77	no	no	no
Di-n-octylphthalate	1.80x10 ^{03 d}	3	12	no	no	no
1,4-Dichlorobenzene	1.20x10 ⁰¹	0.042	0.0065	no	no	no
Fluoranthene	2.20x10 ⁰⁴	nr	8.5	no	no	no
Xylenes	2.70x10 ⁰³	0.037	0.012	no	no	no
Pesticides/PCBs						
Aldrin	1.00x10 ⁻⁰¹	nr	0.0017	no	no	no
Aroclor-1254	7.40x10 ⁻⁰¹	1.1	1.6	YES	YES	no
4,4'-DDD	7.20x10 ^{00 d}	nr	0.0076	no	no	no
4,4'-DDT	7.00x10 ⁰⁰	nr	0.0094	no	no	no

^a Unless otherwise noted, values are from http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/, February 21, 2011. When carcinogenic (risk) and non-carcinogenic (hazard) based screening levels were given for a constituent, the lower of the two was selected.

^b From Table A.2-1 of the BRA (Auxier 2000)

^c "YES" signifies that the analyte was selected for quantitative risk evaluation, "no" signifies that analyte was not selected for quantitative risk evaluation.

^d Value from BRA, no updated information identified.

^e nr = not reported

^f Measured on the former Ford property (current Buffer Zone and Crossroad Lot 2A2 properties) before surface grading were performed by the adjacent property owner.

Comments Regarding SLAPS and FUSRAP Experience

- EPA Additional Comment 32
- MDNR General Comment 4

EPA Additional Comment 32

Comment

32. The discussion about means, methods, implementability, and other aspects of transportation, and off-site disposal should reflect a consideration of the experiences during the remedial actions at the St. Louis Airport properties (SLAPS) nearby.

Discussion

Detailed reviews of remedial action objectives, selected remedies and remedy details, remedy implementation, remaining issues, and protectiveness statements for the St. Louis Airport Property Site (SLAPS) and SLAPS vicinity properties (SLAPS VPs) are presented in the second Five Year Review Report for the St. Louis North County sites, prepared by the U.S. Army Corps of Engineers (USACE, 2010). Pertinent information from the SLAPS second Five Year Review includes the following information:

- SLAPS consists of 21.7 acres north of Lambert-St. Louis International Airport in north St. Louis County. The SLAPS VPs consist of 78 properties in north St. Louis County. Both SLAPS and the SLAPS VPs are a part of the North County sites. The SLAPS property was used for uncontrolled storage of radioactive waste materials and subsequent transportation of Manhattan Engineering District/Atomic Energy Commission (MED/AEC) (a/k/a the Manhattan Project) contaminated materials generated at the St. Louis Downtown Site (SLDS). The SLAPS VPs include haul roads and properties adjacent to haul roads which became contaminated from transport and handling of the radioactive materials. Characterization activities determined that contamination related to MED/AEC activities was present in accessible surface and subsurface soils, as well as in inaccessible soils, at both SLAPS and the SLAPS VP sites.
- Remedial action objectives of the SLAPS and SLAPS VPs consist of the following:
 - Prevent exposure to contaminated soils at concentrations which exceed chemical-specific ARARs or which result in an excess lifetime cancer risk greater than the acceptable risk range. The potential exposure pathways are direct contact, ingestion, inhalation of dust, and external gamma radiation.
 - Prevent exposure to contaminated structural surfaces at concentrations which result in an excess lifetime cancer risk greater than the acceptable risk range.

Buildings and structures are contaminated primarily as a result of contaminated soils adhering to or becoming embedded in surfaces. The potential exposure pathways are external gamma radiation, ingestion, and inhalation.

- Prevent exposure to contaminated sediments in Coldwater Creek at concentrations which result in an excess lifetime cancer risk greater than the acceptable risk range. The potential exposure pathways are direct contact, ingestion, and external gamma radiation.
 - Remove the potential for ongoing migration of soil contaminants to the shallow groundwater system and Coldwater Creek. Accomplishing this objective would also preclude the potential for future impacts to the deep ground-water systems and the usable ground-water resource.
- The selected remedy for SLAPS and the SLAPS VPs is excavation of accessible surface and subsurface soils, with use of institutional controls for inaccessible soils under roads, rail lines, and other permanent structures. The main components of the remedy consist of 1) excavation of contaminated material to remediation goals that support unlimited exposure, with disposal of excavated materials offsite at a permitted facility; and 2) land use restrictions for inaccessible areas under roads, active rail lines and other permanent structures where contamination levels are not consistent with unlimited exposure.
- Response actions for SLAPS through 2009 involved excavation and offsite disposal of approximately 420,500 bank cubic yards (bcy) of radioactively-contaminated soil from surface or near surface depths (down to 6-inches below the ground surface (bgs)), and from deeper depths (to approximately 15 feet bgs).
- Excavation used conventional excavators, loaders, and short-haul dump trucks. A rail spur was constructed and is used to load excavated material into rail cars, which in turn transported the excavated materials to off-site licensed disposal facilities.

Response action details from SLAPS that could potential be used at the West Lake site include the following:

- A portion of SLAPS is enclosed by chain-link fence, with vehicle access through a gated entrance. Non-work hour security is conducted site-wide. Environmental monitoring is conducted at the site boundaries. Thermoluminescent dosimeters (TLDs), radon alpha track detectors (ATDs) and particulate air filters are used in various combinations to monitor gamma radiation exposure levels, radon emissions, and airborne radionuclide emissions. A ground-water monitoring well network is used to sample and evaluate ground-water constituent concentrations and potential effects on ground-water quality.

- Storm-water sampling and monitoring are conducted to meet National Pollutant Discharge Elimination System (NPDES)-equivalent and 120 CFR Part 20 Appendix B requirements for the site. In addition, monitoring to meet St. Louis Metropolitan Sewer District (MSD) discharge requirements is conducted. Drainage and water control are integral to the response actions conducted at SLAPS.
- Most of the excavation work occurred at or below the water table elevation and, at times, precipitation falling into excavations could not be avoided. In an effort to manage the water and prevent precipitation from commingling with ground water, gross excavation was performed to just above the elevation of the ground water. The excavations were then covered with 12-mil liners to keep precipitation from commingling with ground water. Water management berms were also installed to accommodate the liners and increase the effectiveness of water segregation. The precipitation retained in the liners was sampled (to confirm segregation from ground water) before being pumped off site.
- Soil from at or below the water table was often removed in two stages. Following gross excavation, a guided excavation was performed on a survey unit (SU)-to-SU basis. Only areas being excavated, used as sumps, or soon to be verified as remediated were left uncovered. SUs were backfilled to prevent runoff into active excavations. Stabilized drainage ways were constructed along the northern and southern boundaries of the site to convey run-off into a sedimentation basin located at the west end of the site.
- In 2000, monitoring of ground-water intrusion into active work areas indicated levels of selenium exceeding guidelines. A de-nitrification treatment was installed to lower selenium concentrations in the water removed from the excavations to levels below guidelines. A series of water storage tanks, having a capacity of over 600,000 gallons, are used to store water prior to treatment and/or discharge. In February 2005, the USACE requested a variance from a MSD ordinance that limits the selenium concentration in water discharged to the systems to 100,000 gallons of water per day at 200 micrograms per liter (ug/L) that would result in 76 grams (g) of selenium discharged. The variance sought to retain the allowable mass of 76 g of selenium per day, but to increase that maximum allowable concentration of selenium to 900 ug/L. MSD approved the variance request on February 10, 2005 because the variance request did not increase the amount of selenium that can be discharged, but only increased the maximum concentration of selenium in the water.

Many of the same remediation contractors who worked on the SLAPS and SLAPS VP sites were consulted during preparation of the West Lake SFS. Their experiences were considered and incorporated as appropriate into the assessment of potentially applicable

remedial technologies. In particular waste classification and treatment requirements, potential ARARs associated with offsite transportation and disposal of waste materials, evaluations of the implementability of the remedial alternatives, short-term risk calculations, and in the preparation of project schedules and cost estimates for the "Complete Rad Removal" alternatives.

Although both the SLAPS sites and West Lake contain radioactive materials, the nature of the sites as well as the nature and distribution of the contamination are very different. As such, the nature of the excavation and offsite disposal activities performed at SLAPS differs greatly from the "Complete Rad Removal" alternatives were considered.

First, the majority of the properties within the SLAPS and SLAPS VP sites were considered to be suitable for unrestricted use. The West Lake Landfill is a solid waste landfill. The West Lake Landfill has been a landfill for many decades and will remain a dedicated landfill site into the future. In short, waste disposal is consistent with current and future land use at the West Lake site; such was not determined for SLAPS. Accordingly, land use in West Lake OU-1 is restricted through covenants recorded by the property owners; the restrictions cannot be terminated without the written approval of both MDNR and EPA. In addition, more comprehensive land-use restrictions are part of the ROD remedy. If there is an analogy to be drawn with SLAPS, it is with the "inaccessible soils" within the SLAPS VPs, which are areas of contaminated soil that cannot be accessed because it is located beneath roadways, rail lines, buildings or other permanent structures. These areas are not part of the excavation remedy, but instead potential future risks associated with these soils are controlled through use of institutional controls.

Second, the majority of radioactive contamination at SLAPS was present in surficial or near surface shallow soil that was easily accessed and removed. In contrast, contaminated soil at West Lake is intermixed with solid wastes and occurs at depths as great as 50 ft below ground surface, and as such, is not easily accessed or removed. In those areas at the SLAPS VPs where soils could not be accessed due to active roads, rail lines, or structures, the radioactive contamination was left in place and risk is controlled through institutional controls.

SFS Text Revisions

The SFS text as written reflects the experience of the selected remedy at SLAPS and the SLAPS VPs. The specific SLAPS and SLAPS VPs experiences discussed above can be factored into RD and RA planning and implementation documents at West Lake Landfill for the selected remedy, as appropriate.

References

USACE, 2010. Final, Five-Year Review Report, Second Five-Year Review Report for Formerly Used Sites Remedial Action Program (FUSRAP) St. Louis Sites, St. Louis Missouri, U.S. Army Corps of Engineers, St. Louis District Office. September 22, 2010.

MDNR General Comment 4

Comment

4.) Coordination with other Agencies

Has the U.S. Army Corps of Engineers (USACE) been consulted about the excavation with off-site disposal alternative. The USACE has experience and expertise with this option due to their work on the Formally Utilized Sites Remedial Action Project (FUSRAP). Have experts at the Department of Energy been contacted for input on the onsite disposal cell alternative. The Department also encourages continued contact with the St. Louis County Health Department throughout the development of the SFS and into the Remedial Design phase.

Discussion

DOE personnel familiar with waste excavation activities at the DOE Mound Site were contacted to obtain information regarding their experience with waste excavation and the related issues, problems and costs associated with waste excavation at the Mound Site. USACE was contacted regarding their experience with the FUSRAP sites, specifically the North County sites including the SLAPS and SLAPS VPs. As noted above, contact was made with contractors involved in the work at FUSRAP sites and the SLAPS sites to obtain information regarding technical approaches, issues and costs relative to waste excavation, transportation and offsite disposal. The St. Louis County Health Department has been contacted and consulted regarding issues related to the remedial alternatives, including appropriate standards for handling asbestos containing materials, if encountered.

The Respondents and their technical team will continue to consult with these and other appropriate parties for input during the Remedial Design phase.

SFS Text Revisions

No changes.

EPA FEEDBACK:

EPA accepts this response.